

## **THE CLAIMS**

### **What is claimed is:**

1. A gas-using facility including a portable dry scrubber system and/or over-pressure control system for controllably venting over-pressure gas from a compressed gas storage vessel operatively connected in gas-supplying relationship to the gas-using facility and terminating venting when pressure in the compressed gas storage vessel has been reduced to a predetermined pressure below the burst pressure of the vessel.
2. The gas-using facility of claim 1, comprising a semiconductor manufacturing facility.
3. The gas-using facility of claim 1, including said portable dry scrubber system.
4. The gas-using facility of claim 3, wherein the portable dry scrubber system comprises a unitary modular apparatus including a chamber having at least one bed of scrubbing material therein for contacting with an effluent gas produced by the facility, to remove scrubbable components from the effluent gas.
5. The gas-using facility of claim 4, wherein the chamber comprises at least one inlet port and at least one discharge port for flow of gas therethrough, and said ports have associated therewith quick-connect/quick-disconnect couplings.
6. The gas-using facility of claim 4, wherein the chamber comprises process control means associated therewith.
7. The gas-using facility of claim 4, wherein the portable dry scrubber system comprises motive transport means for translation of the system.

8. The gas-using facility of claim 4, wherein the chamber has a volume of scrubbing material therein that is in a range of from about 0.1 to about 10 gallons.
9. The gas-using facility of claim 4, wherein the chamber has a vertically upstanding shape, and is arranged for vertical upward flow of gas therethrough.
10. The gas-using facility of claim 9, wherein the chamber is cylindrical, cubic or rectangular in form.
11. The gas-using facility of claim 4, wherein the chamber is sized to accommodate a flow therethrough of gas in a range of from about 0.1 to about 35 standard cubic feet per minute.
12. The gas-using facility of claim 4, wherein the scrubbing material comprises a sorbent material selected from the group consisting of CuO, CuCO<sub>3</sub>, Cu(OH)<sub>2</sub>, NiO, Na<sub>2</sub>O, ZnO, Fe<sub>2</sub>O<sub>3</sub>, Ca(OH)<sub>2</sub>, LiOH, KOH, MnO, CoO, AgO, and combinations of two or more of the foregoing.
13. The gas-using facility of claim 4, wherein the portable dry scrubber system has a footprint in a range of about 0.01 to about 4 square feet.
14. The gas-using facility of claim 4, wherein the portable dry scrubber comprises a viewport having a colorimetric indicator element therein to show a color change indicative of breakthrough of a contaminant gas species from the bed of scrubbing material.
15. A portable dry scrubber system comprising a unitary modular apparatus including a chamber having at least one bed of scrubbing material therein for contacting a gas containing at least one scrubbable component therein, to remove said at least one scrubbable component from the gas.

16. The portable dry scrubber system of claim 15, wherein the chamber comprises at least one inlet port and at least one discharge port for flow of gas therethrough, and said ports have associated therewith quick-connect/quick-disconnect couplings.

17. The portable dry scrubber system of claim 15, wherein the chamber comprises process control means associated therewith.

18. The portable dry scrubber system of claim 15, comprising motive transport means for translation of the system.

19. The portable dry scrubber system of claim 15, wherein the chamber has a volume of scrubbing material therein that is in a range of from about 0.1 to about 10 gallons.

20. The portable dry scrubber system of claim 15, wherein the chamber has a vertically upstanding shape, and is arranged for vertical upward flow of gas therethrough.

21. The portable dry scrubber system of claim 15, wherein the chamber is sized to accommodate a flow therethrough of gas in a range of from about 0.1 to about 35 standard cubic feet per minute.

22. The portable dry scrubber system of claim 15, wherein the scrubbing material comprises a sorbent material selected from the group consisting of CuO, CuCO<sub>3</sub>, Cu(OH)<sub>2</sub>, NiO, Na<sub>2</sub>O, ZnO, Fe<sub>2</sub>O<sub>3</sub>, Ca(OH)<sub>2</sub>, LiOH, KOH, MnO, CoO, AgO, and combinations of two or more of the foregoing.

23. The portable dry scrubber system of claim 15, having a footprint in a range of from about 0.01 to about 4 square feet.

24. The portable dry scrubber system of claim 15, comprising a viewport having a colorimetric indicator element therein to show a color change indicative of breakthrough of a contaminant gas species from the bed of scrubbing material.

25. An over-pressure control system for controllably venting over-pressure gas from a compressed gas storage vessel operatively connected in gas-supplying relationship to a gas-using facility and terminating venting when pressure in the compressed gas storage vessel has been reduced to a predetermined pressure below the burst pressure of the vessel.

26. The over-pressure control system of claim 25, wherein the vented over-pressure gas is flowed to an abatement system comprises a dry scrubber unit including a scrubbing material having sorptive affinity for the over-pressure gas.

27. The over-pressure control system of claim 25, comprising a failure element arranged to fail at a predetermined failure pressure.

28. The over-pressure control system of claim 25, wherein the failure element comprises a burst disk.